



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/532,673

04/26/2005

Michihiko Takase

2005_0642A

8711

513 7590 07/28/2008

WENDEROTH, LIND & PONACK, L.L.P.

2033 K STREET N. W.

SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

BURKHART, ELIZABETH A

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

07/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,673	Applicant(s) TAKASE ET AL.	
	Examiner ELIZABETH A. BURKHART	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/26/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 13-15, 17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Shintani (JP 11-080952).

Shintani teaches a process for forming an MgO film onto a substrate of an AC type plasma display panel [0002] while keeping a partial pressure of a certain gas (oxygen) in a deposition room within a certain range and keeping a vacuum degree in the deposition room within a certain range (Abstract). The oxygen partial pressure is kept within a certain range by controlling an amount of oxygen introduced into the deposition room while the deposition room is exhausted [0004]. Shintani also teaches an apparatus for depositing said MgO film, the apparatus comprising: a deposition room, a gas introducing means, an exhausting means, a partial pressure detecting means, a vacuum degree detecting means, and a controlling means for controlling the amount of gas introduced to said deposition room and for controlling the amount of exhausting gas based on information from the partial pressure detecting means and vacuum degree detecting means [0002], [0004]-[0006].

Thus, Shintani describes every limitation of claims 1-4, 13-15, 17, and 19, and thus anticipates the claims.

Art Unit: 1792

2. Claims 1, 3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hidaka et al (JP 10-106441).

Hidaka teaches a method for forming an MgO film on an AC type plasma display panel [0001] while keeping a partial pressure of oxygen within a certain range and while keeping a partial pressure of steam within a certain range to enhance the 110 orientation of MgO film which enhances sputtering resistance (Abstract).

Thus, Hidaka describes every limitation of claims 1, 3, and 6, and thus anticipates the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) as applied above in view of Kawakusu et al (JP 2000-277009).

Shintani does not teach the specific range at which the oxygen partial pressure is maintained.

Kawakusu teaches a method for forming an MgO film onto a substrate of an AC type plasma display panel while keeping the oxygen partial pressure within a range of 1×10^{-5} - 1×10^{-4} Torr (1.33×10^{-3} - 1.33×10^{-2} Pa) (Abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to maintain the oxygen partial pressure of Shintani within the specific range suggested by Kawakusu since this range would have reasonably been expected to be suitable for deposition of an MgO film on AC type plasma display panels.

Thus, claim 5 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani and Kawakusu.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) as applied above in view of Okuyama et al (JP 2001-243886).

Shintani does not teach keeping the vacuum degree within a certain range by introducing an inert gas while the deposition room is exhausted.

Okuyama teaches a method for forming an MgO film on a plasma display panel (Abstract) wherein a mixed gas containing an inert gas and oxygen may be introduced to the chamber during deposition in order to control membraneous quality of the film [0025].

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to introduce an inert gas as suggested by Okuyama along with the oxygen gas of Shintani in order to control membraneous quality of the MgO film.

Art Unit: 1792

Since Shintani teaches keeping the vacuum degree within a certain range by exhausting the deposition room while introducing oxygen gas, the incorporation of the inert gas of Okuyama with the oxygen gas of Shintani would read on the claimed limitation.

Thus, claim 12 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani and Okuyama.

5. Claims 7, 8, 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) as applied above in view of Hidaka et al (JP 10-106441).

Shintani does not teach that the certain gas having a partial pressure in a certain range is at least one of water, hydrogen, carbon monoxide, or carbon dioxide.

Hidaka teaches a method for forming an MgO film on an AC type plasma display panel [0001] while keeping a partial pressure of oxygen within a certain range and while keeping a partial pressure of steam within a certain range to enhance the 110 orientation of MgO film which enhances sputtering resistance (Abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to incorporate steam as suggested by Hidaka into the process of Shintani in order to form an MgO film having an enhanced 110 orientation which enhances sputtering resistance.

Regarding Claim 8, Hidaka teaches that the partial pressure of steam may range from 1×10^{-5} - 1×10^{-3} Torr (1.33×10^{-3} - 1.33×10^{-1} Pa) [0013]. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention by

applicant if the overlapping portion of the partial pressure range disclosed by the reference was selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90.

Thus, claims 7, 8, 16, 18, and 20 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani and Hidaka.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Hidaka et al (JP 10-106441) as applied above and further in view of Furuya (JP 09-295894).

Shintani and Hidaka do not teach that the certain gas is hydrogen or that the partial pressure of hydrogen is kept within the claimed range.

Furuya teaches a method for forming an MgO film onto a plasma display panel wherein hydrogen or steam is introduced to the chamber in order to obtain an MgO film of high grade (Abstract, [0005]).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to substitute hydrogen as suggested by Furuya for steam in the process of Hidaka in order to obtain an MgO film of high grade. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention by applicant if the overlapping portion of the partial pressure range disclosed by Hidaka was selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90.

Thus, claim 9 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani, Hidaka, and Furuya.

Art Unit: 1792

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Hidaka et al (JP 10-106441) as applied above and further in view of Okuyama et al (JP 2001-243886).

Shintani and Hidaka do not teach that the certain gas is carbon monoxide or carbon dioxide or that the partial pressure of carbon monoxide or carbon dioxide is kept within the claimed range.

Okuyama teaches a method for forming an MgO film on a plasma display panel (Abstract) wherein the oxygen gas included in the vacuum chamber during deposition may be H₂O, CO, or CO₂ [0049].

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to substitute carbon monoxide or carbon dioxide as suggested by Okuyama for oxygen or steam in the processes of Shintani and Hidaka since these were known gases for providing oxygen to the deposition chamber and each would have reasonably been expected to be successful in depositing an MgO film. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention by applicant if the overlapping portion of the partial pressure range disclosed by Hidaka was selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90.

Thus, claims 10 and 11 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Shintani, Hidaka, and Okuyama.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH A. BURKHART whose telephone number is (571)272-6647. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth A Burkhardt/
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1792